

# Notice of Allowability

Application No.

10/539,009

Examiner

Pedro J. Cuevas

Applicant(s)

KANG ET AL.

Art Unit

2834

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Election filed on May 31, 2007.
2. ☒ The allowed claim(s) is/are 1,3,4,7,8,10,11 and 14.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All b) ☐ Some\* c) ☐ None of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date 6/15/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group I, claims 1, 3-4, 7-8, 10-11 and 14 in the reply filed on May 31, 2007 is acknowledged.
2. This application is in condition for allowance except for the presence of claims 2, 5-6, 9, 12-13 and 15-16 directed to an invention non-elected without traverse. Accordingly, claims 2, 5-6, 9, 12-13 and 15-16 will be cancelled.
3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

### **EXAMINER'S AMENDMENT**

4. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a Response to Restriction Requirement communication filed by Chid S. Iyer on May 31, 2007.

The application has been amended as follows.

Please cancel claims 2, 5-6, 9, 12-13 and 15-16.

***Drawings***

5. The drawings were received on June 2, 2006. These drawings are acceptable.

***Allowable Subject Matter***

6. Claims 1, 3-4, 7-8, 10-11 and 14 are allowed.

**Reasons for Allowance**

7. The following is an examiner's statement of reasons for allowance.

The prior art of record, taken alone or in combination, does not teaches the construction of a power generation system as described on and including all the disclosed limitations of independent claim 1, comprising a power controller that includes:

a three-two phase converter for calculating a two-phase current and a two-phase voltage by converting an output voltage and an output current of the generator into a stationary d-q coordinate system;

a generator output calculator for calculating an output of the generator from the two-phase current and the two-phase voltage calculated by the three-two phase converter;

an induced voltage detector for detecting an induced voltage from the two-phase current and the two-phase voltage calculated by the three-two phase converter;

a phase detector for detecting a phase of the induced voltage from the induced voltage detected by the induced voltage detector;

a differentiator for calculating a rotational speed of the induced voltage by differentiating the phase of the induced voltage detected by the phase detector and estimating a shaft speed of the generator; and

a turbine output calculator for calculating an output of the turbine by using the estimated shaft speed value estimated by the differentiator and the output of the generator calculated by the generator output calculator.

The prior art of record, taken alone or in combination, does not teaches the construction of a control method of a power generation system as described on and including all the disclosed limitations of independent claim 8, comprising the steps of:

calculating a two-phase current and a two-phase voltage by converting an output voltage and an output current of the generator into a stationary d-q coordinate system and calculating an output of the generator from the two-phase current and the two-phase voltage;

detecting an induced voltage from the two-phase current and the two-phase voltage;

detecting a phase of the induced voltage from the detected induced voltage;

calculating a rotational speed of the induced voltage by differentiating the detected phase of the induced voltage and estimating a shaft speed of the generator; and

calculating an output of the turbine by using the estimated shaft speed value and the calculated output of the generator.

Dependent claims 3-4, 7, 10-11 and 14 are considered allowable by their respective dependence on allowed independent claims 1 and 8.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

*Conclusion*

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. See PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pedro J. Cuevas whose telephone number is (571) 272-2021. The examiner can normally be reached on M-F from 8:30 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Pedro J. Cuevas  
July 20, 2007

  
DARREN SCHUBERG  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800



Q88253  
10/539,009 Filed: June 15, 2005  
Darryl Mexic (202) 293-7060  
Junkoo KANG, et al.  
POWER GENERATION SYSTEM AND CONTROL  
METHOD THEREOF  
REPLACEMENT SHEET

*Drawing changes accepted*  
*4/24/07*

**FIG. 1**

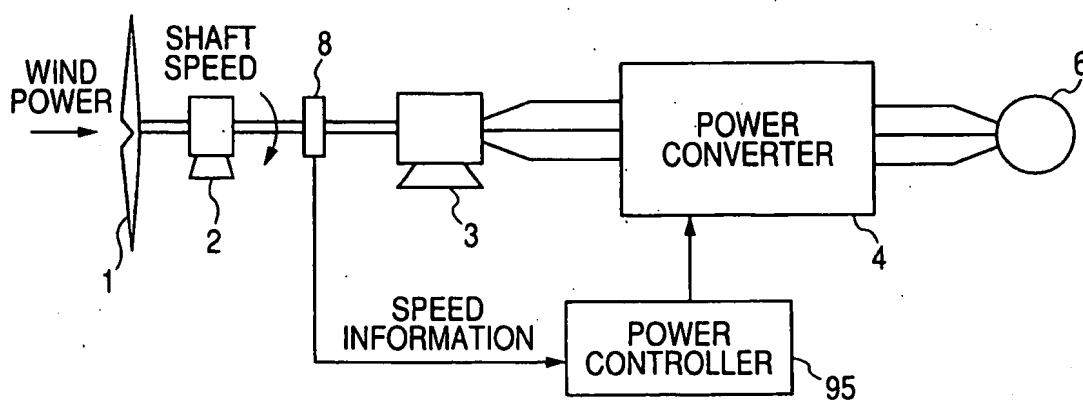




FIG. 2

OK. *[Signature]*

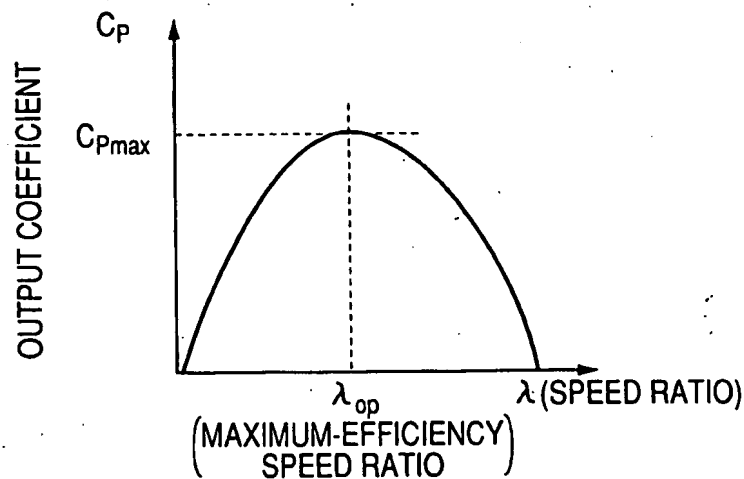
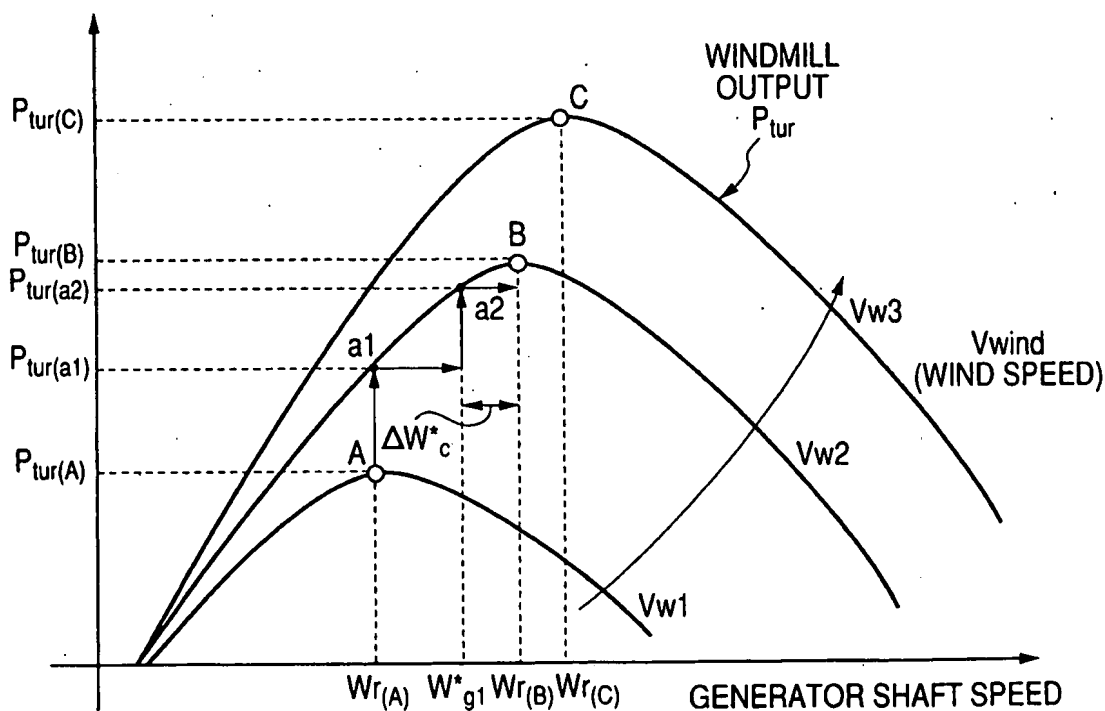


FIG. 3

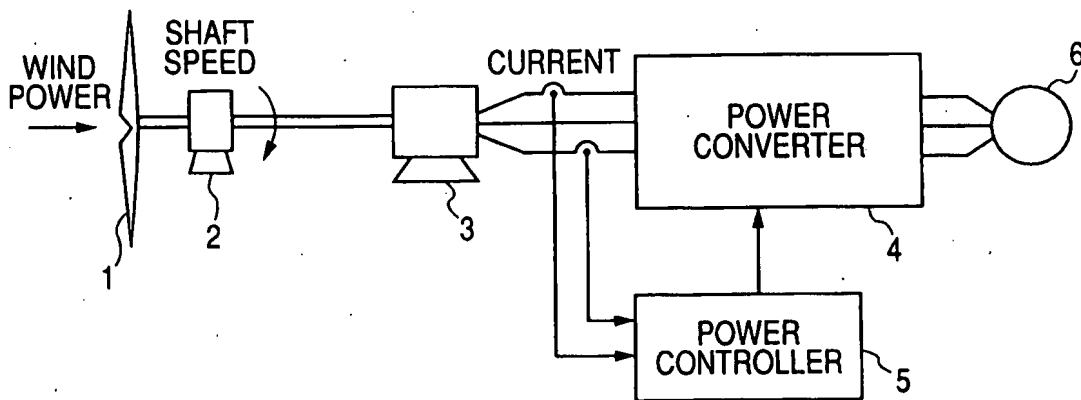




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OK  
BFL

FIG. 4







OK  
JFK

FIG. 5

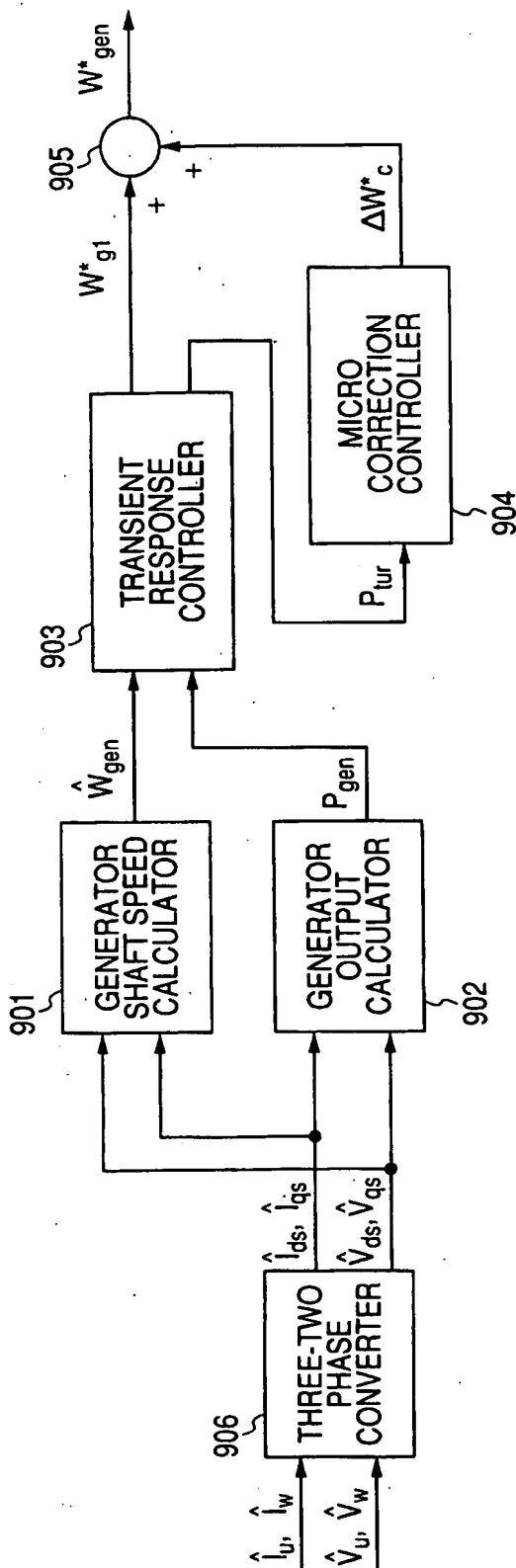




FIG. 6

ok  
of

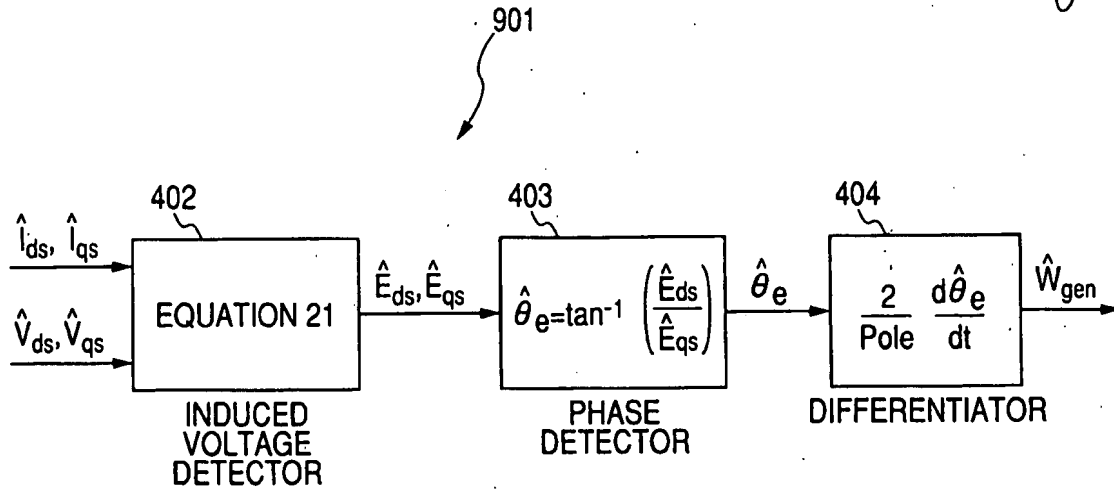


FIG. 7

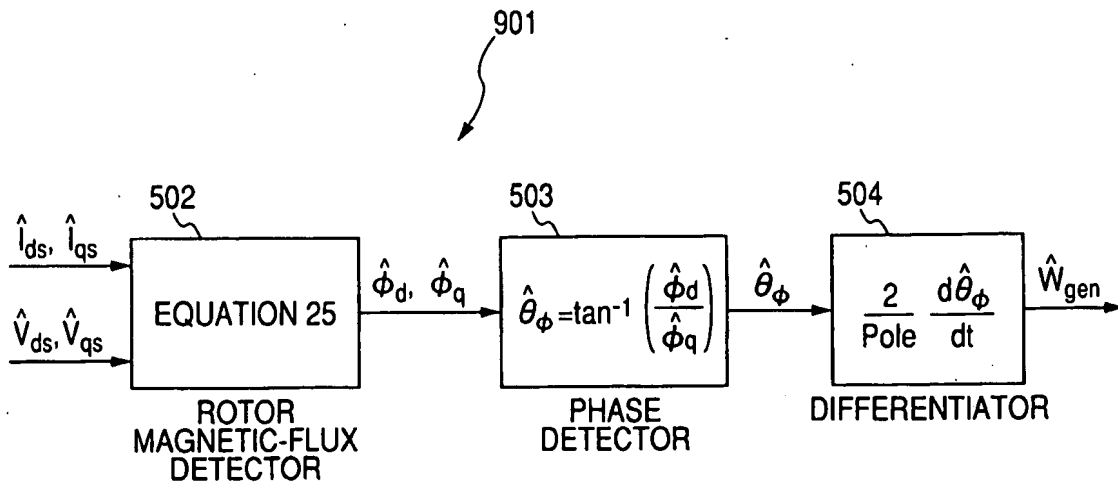




FIG. 8

*ok*

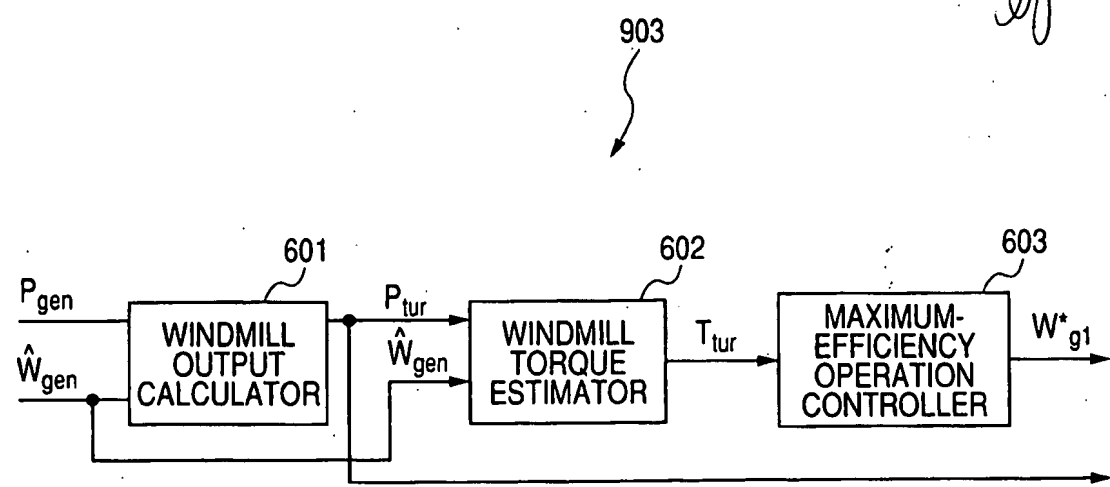
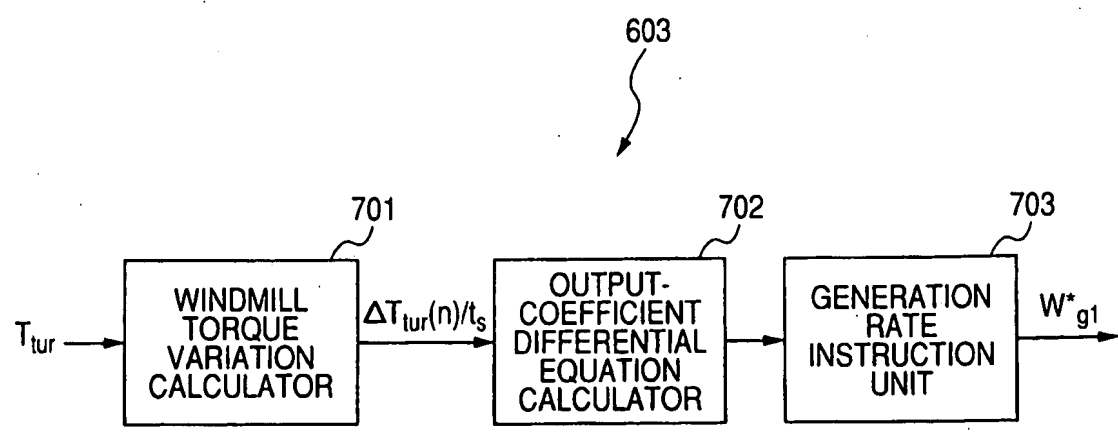


FIG. 9





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ok  
BR

FIG. 10

